
Article:
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Table 1: Unit cost of resource utilisation in the economic evaluation

Resource		**Source**	**Unit cost**	**Scenario analysis**			
Drug (for a 28-day cycle)							
Lenvatinib[a], 4 mg capsule	Dose intensity[c]: 88%	Calculated	$4,050	Dose intensity: 100%			
Sorafenib[b], 200 mg tablet	Dose intensity[c]: 83%	Calculated	$4,643	Dose intensity: 100%			
Disease management		**Source**	**Unit cost**	**% of patients using this resourced**		**Quantity per patient per cycled**	
				PF state	**PD state**	**PF state**	**PD state**
Clinician visits							
Oncologist	Per visit	MBS item 116	$77.9	100%	100%	0.75	0.38
Hepatologist	Per visit	MBS item 116	$77.9	100%	100%	0.17	0.5
Oncology nurse	Per visit	MBS item 82210	$40.4	100%	100%	0.5	1
Gastroenterologist	Per visit	MBS item 116	$77.9	100%	0%	0.08	0
Radiologist	Per visit	MBS item 105	$44.35	100%	0%	0.08	0
Clinical nurse specialist	Per visit	MBS item 82215	$59.5	100%	100%	0.5	0.25
Palliative care physician/nurse	Per session	MBS item 3055	$164.3	100%	100%	0.13	0.75
Laboratory tests							
AFP test	Per unit	MBS item 66650	$24.4	75%	38%	0.83	1
Liver function test	Per unit	MBS item 66500	$9.70	50%	25%	0.67	1
INR	Per unit	MBS item 65120	$13.7	50%	0%	0.67	0
Complete blood count	Per unit	MBS item 65070	$16.95	75%	50%	1	1
Biochemistry	Per unit	MBS item 66512	$17.7	50%	25%	1	1
Endoscopy	Per unit	MBS item 11820	$1,249	25%	0%	0.33	0
CT scan (abdominal)	Per unit	MBS item 56801	$466.5	73%	73%	0.33	0.39
MRI scan (abdominal)	Per unit	MBS item 63482	$403	27%	27%	0.33	0.5

Hospitalisation							
Hospitalisatione	Per episode	ARDRG H61A-B	$7427	46%	48%	0.16	0.4
Post-hospital follow-up							
Specialist	Per visit	MBS item 116	$77.9	100%	100%	0.25	3
GP	Per visit	MBS item 23	$38.2	100%	100%	1.5	1.5
Nurse	Per visit	MBS item 82205	$21.3	100%	100%	1.75	2
Sub-total							
PF health state	Per cycle	-	$1,074	-	-	-	-
PD health state	Per cycle	-	$2,126	-	-	-	-

AFP Alpha-fetoprotein, *ARGDRG* Australian Refined Diagnosis Related Groups, *CT* Computed tomography, *GP* general physician, *IHPA* Independent Hospital Pricing Authority, INR international normalized ratio, *MBS* Medicare Benefits Schedule, *mg* milligram , *MRI* magnetic resonance imaging, *PF* progression-free, *PD* progressed disease

[a]Recommended dose of 12 mg/day (for bodyweight ≥60 kg) or 8 mg/day (for bodyweight <60 kg).

[b]Recommended dose 400 mg twice-daily.

[c]Dose intensity based on the RELFECT trial accounting for dose reduction/interruptions.

[d]Physician survey in the Manufacture Lenvatinib submission for NICE UK [7].

[e]National Hospital Cost Data Collection, Public Hospitals Cost Report, Available at https://www.ihpa.gov.au/what-we-do/nhcdc

Table 2: Results of the modelled economic evaluation

Outcome	Lenvatinib	Sorafenib	Difference
Total costs	$96,325	$92,394	$3,931
Drug acquisition costs	$37,144	$33,458	$3,686
PF health state costs	$11,630	$7,685	$3,946
PD heath state costs	$20,488	$24,901	-$4,413
Terminal care and AEs costs	$27,061	$26,350	$712
Total LYs	1.705	1.572	0.133
Total QALYs	1.205	1.086	0.119
ICUR ($/QALYs)	-	-	$33,028

AE adverse events, *ICUR* incremental cost-utility ratio, *LYs* life years, *PD* progressed-disease, *PF* progression-free, *QALYs* quality-adjusted life years

Table 3: Scenario analysis

Scenario	Incremental Cost	Incremental QALYs	ICUR
Base case	$3,931	0.119	$33,028
Sorafenib price discount: 25%	$12,295	0.119	$103,309
Sorafenib price discount: 30%	$13,968	0.119	$117,366
Dose intensity (100%)	$2,143	0.119	$18,007
BW >60 kg (80% patients)	$5,594	0.119	$47,002
PFS distribution: exponential	$4,898	0.114	$43,006
PFS distribution: weibull	$5,384	0.111	$48,368
PFS distribution: gompertz[a]	$5,230	0.112	$46,641
PFS distribution: loglogistic	$3,354	0.122	$27,478

Scenario	Incremental Cost	Incremental QALYs	ICUR
PFS distribution: lognormal	$4,185	0.118	$35,564
OS distribution: exponential	$3,996	0.125	$31,924
OS distribution: weibull	$3,441	0.109	$31,560
OS distribution: gompertz	$3,114	0.099	$31,587
OS distribution: loglogistic	$4,150	0.132	$31,414
OS distribution: lognormal	$4,120	0.132	$31,258
OS equivalent in both drugs[b]	$502	0.029	$17,672
Exclude End-of-Life cost	$3,906	0.119	$32,818

BW body weight*; PFS* Progression-free survival, *OS* overall survival, *ICUR* incremental cost-utility ratio, *kg* kilograms; *QALY* quality-adjusted life years

[a]In this scenario, the PFS curves for lenvatinib and sorafenib were assumed same when they cross each other.

[b]Assume same OS for both lenvatinib OS and sorafenib.